AMENDMENT NO. 23

STATE OF WASHINGTON

RADIOACTIVE MATERIALS LICENSE

Pursuant to the Nuclear Energy and Radiation Control Act, RCW 70.98, and the Radiation Control Regulations, Chapters 246-220 through 246-255 WAC, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below; and to use such radioactive materials for the purpose(s) and at the place(s) designated below. **This license is subject to all applicable rules and regulations** promulgated by the State of Washington Department of Health.

1. Licensee Name:	3. License Number:
DAWN MINING COMPANY, L.L.C	WN-I043-2 is amended in its entirety to read as follows:
2. Address:	**4. Expiration Date:**
P.O. Box 250 Ford, Washington 99013 Attn: Robert Nelson, General Manager	31 January 2004
	5. Reference Number(s):

6. Radioactive Material (element and mass number).	7. Chemical and/or Physical Form.	8. Maximum quantity licensee may possess at any one time.
6.A. 11.e(2) byproduct Material.	7.A. Any.	8.A. Unlimited.
6.B. Source material.	7.B. Filtercake sludge from the Midnite Mine Water Treatment Plant (MMWTP).	8.B. Not to exceed 550,000 cubic feet.
6.C. Source material	7.C. Filtercake sludge from the MMWTP.	8.C. Not to exceed 1,000 cubic feet.
6.D. Source material.	7.D. Yellowcake (U_3O_8).	8.D. Not to exceed 1,000 cubic feet.
6.E. Americium-241/Beryllium.	7.E. Sealed source (Campbell Pacific Nuclear Model CPN-131).	8.E. No single source to exceed 50 millicuries (1850 megabequerels).
6.F. Cesium-137.	7.F. Sealed source (Campbell Pacific Nuclear Model CPN-131).	8.F. No single source to exceed 10 millicuries (370 megabequerels).
6.G. Strontium-90/Yttrium-90.	7.G. Sealed source.	8.G. 350 microcuries.

CONDITIONS

9. Authorized use.

   A. Possession of byproduct material generated by the licensee's past milling operations, as well as its current processing of Midnite Mine Water Treatment Plant (MMWTP) filtercake sludge.

   B. Possession of MMWTP filtercake sludge generated by the water treatment facility at the Midnite Mine directly disposed into TDA-4.

   C. The maximum quantity of source material in Item 8.C applies only to above ground storage prior to processing for its uranium content or direct disposal into TDA-4.

   D. Possession of yellowcake produced from the processing of MMWTP filtercake sludge for its uranium content.

   E&F. To be used in Campbell Pacific Nuclear Model 501 series depth probe for soil moisture determinations.

   G. Calibration source.

10. A, B, C, D & G. The authorized place for use shall be the licensee's facility, located at 5326 Uranium City Road, Ford, Washington.

    E & F. Radioactive material listed in 6.E & F shall be stored and/or used at 5326 Uranium City Road, Ford, Washington, and may be used at temporary job sites of the licensee within the state of Washington. This condition does not prohibit use in states under U.S. Nuclear Regulatory Commission (NRC) jurisdiction or in other Agreement States under reciprocity procedures which may be established by the NRC or those states.

11. The licensee shall comply with the provisions of RCW 70.121.030, "Mill Tailings--Licensing and Perpetual Care;" Chapter 246-220 WAC, "Radiation Protection--General Provisions;" Chapter 246-221 WAC, "Radiation Protection Standards;" Chapter 246-222 WAC, "Radiation Protection--Worker Rights;" Chapter 246-235 WAC, "Radioactive Materials--Specific Licenses;" and Chapter 246-252 WAC, "Radiation Protection--Uranium and/or Thorium Milling," and is subject to the rules, regulations, and orders of the Department of Health now or hereafter in effect, and to the additional conditions specified or incorporated in this license. The deletion of any license

condition that was included in Amendment 22 and is otherwise required by applicable law or regulation does not affect this condition.

GENERAL OPERATION

12. The licensee is hereby exempted from the requirements of Chapter 246-221-120(8) and (9) for areas and containers within the millsite, provided that all entrances to the property are conspicuously posted in accordance with WAC 246-221-120 and with the words, "CAUTION--ANY AREA OR CONTAINER WITHIN THIS AREA MAY CONTAIN RADIOACTIVE MATERIALS."

13. Radioactive material shall be used by, or under the supervision of the Site Manager, Robert Nelson, or the licensee's Radiation Safety Officer (RSO), Sean Murphy.

14. The licensee's RSO shall be responsible for matters dealing with radiological safety aspects of the licensed facility, and shall be ultimately responsible to the company President for matters related to radiation safety.

15. The RSO or his designee shall be qualified as specified in Standards Procedure DMOP 01.

16. The RSO or his designee shall have the authorities and responsibilities which are contained in DMOP 01. The RSO shall also receive 40 hours of related health and safety refresher training every two years.

17. Individuals designated as authorized users shall report to the RSO on matters dealing with radiological safety. The RSO or his designee shall be accessible to the authorized users at all times. Authorized users shall have qualifications as specified in DMOP 01 or equivalent. Any person newly hired as an authorized user shall have all work reviewed and approved by the RSO as part of a comprehensive training program until appropriate course training is complete.

18. The licensee shall notify the department in writing 30 days prior to any change in the licensee's business structure, and shall notify the department of the appointment of a new Site Manager or RSO, describing how the appointee meets or exceeds the minimum qualifications specified in the Standards Procedure DMOP 01.

FACILITY OPERATIONS

19. The licensee shall restrict eating, drinking, smoking, and chewing of tobacco to the non-restricted areas.

20. For any major operations not previously reviewed by the department, the licensee may propose demonstration plans of limited time and scope-of-work to the department for approval. The licensee must describe the beginning and ending date and the specific scope-of-work proposed. The department must approve proposed demonstration plans, with conditions, if needed, before implementation. Demonstration plans may convert to continuing operational plans upon successful demonstration, submittal of appropriate plans, specifications, work plans, or operational procedures, and department approval.

21. The licensee shall maintain and utilize only those operating procedures and Quality Assurance Procedures (DMOP/DMQP) approved by the department. Any change to those procedures must be approved by the department. The licensee shall have all written procedures reviewed and approved by the RSO before a change in a procedure is proposed. An up-to-date copy of each written procedure, including accident and fire protection plans, as controlled under the quality assurance (QA) procedures, shall be kept in each area where it is used.

22. The licensee shall require the RSO to perform and document inspections of all work areas at least monthly. The licensee shall initiate corrective action for any deficiencies noted during the inspection within seven working days. The results of the inspections and any necessary corrective actions shall be reported in the ALARA Report, submitted May 31 of each year.

23. The licensee shall perform an annual ALARA audit of the radiation safety program which shall be led by the RSO. This audit must be completed by May 31 of each year. The audit team should contain a representative from company management. A report of this audit shall be submitted to company headquarters and to the department within 60 days after conducting the audit. The report shall include summaries of the analytical results of the radiological surveys. The audit shall also address any noticeable trends in personnel exposures for identifiable categories of workers and types of activities, any trends in radiological effluent data, and the performance of exposure and effluent control equipment as well as its utilization, maintenance, and inspection history. Any recommendations to further reduce personnel exposures or environmental releases of uranium or radon and radon progeny shall be included in the report.

    In order to evaluate the ALARA objective, the licensee shall, at a minimum, review the following records:

    A. Bioassay results, including any actions taken when the results exceeded the action levels listed in DMOP 03.

    B. Records of external and internal exposure.

    C. Safety meeting minutes, attendance records, and training program records.

D. Any daily or monthly inspection reports required by this license.

E. Radiological survey and monitoring data, as well as environmental radiological effluent and monitoring data.

F. Surveys required by radiation work permits.

G. Reports of overexposure submitted to the department.

H. Reviews of operating and monitoring procedures completed during the period.

24. The licensee shall maintain a bioassay program in accordance with DMC's Operating Procedures DMOP 3.

25. The licensee shall conduct annual operational training that covers all aspects of operational safety and emergency procedures for site employees. The DMOP's and DMQP's will be used to conduct operations training to ensure consistency and thoroughness. Additionally, the annual ALARA audit report required by Condition 23 of this license shall be a part of the annual refresher training.

26. In addition to the required personnel monitoring, the licensee shall monitor the following locations to demonstrate compliance with WAC 246-221. The licensee shall:

A. Monitor at least the following areas for air concentrations of radon and airborne particulates:

(1) All administration buildings (continuous—radon only)

(2) Mill building (continuous for radon—one 24-hour grab sample for particulates per month)

(3) Any other normally occupied structure within the site perimeter, as required by the department.

B. Continuously monitor the site perimeter for radon and airborne particulates, at locations specified in Appendix A.

C. Utilize personnel lapel sampling in accordance with DMOP 18.

27. Release of equipment from the restricted area shall be in accordance with DMOP 04.

28. The exposed TDA-4 liner below the approved fill level must be inspected annually. Observed defects shall be reported to the department within 14 days and repaired in a timely manner, and before filling TDA-4 above the level of such defects.

MIDNITE MINE FILTERCAKE SLUDGE RECEIPT AND IMPOUND OPERATIONS

29. Direct disposal of MMWTP filtercake sludge shall only be allowed after the licensee successfully demonstrates its ability to implement the process described in DMOP 18. The licensee shall give at least five days notice to the department prior to this demonstration.

30. The licensee shall maintain a shipment record for MMWTP filtercake sludge received for disposal at the facility. As a minimum, the shipment record shall include:

    A. Date of receipt of MMWTP filtercake sludge.

    B. Date of placement of MMWTP filtercake sludge into TDA-4.

    C. Weight and calculated volume of each shipment of MMWTP filtercake sludge.

    D. General placement location in TDA-4 of MMWTP filtercake sludge, as specified in DMOP 18.

31. The licensee shall use procedures specified in DMOP 18 to verify that chemical concentrations in MMWTP filtercake sludge do not characterize the sludge as "dangerous waste" or "hazardous waste," per Chapter 173-240 WAC.

32. In the event that testing of the MMWTP filtercake sludge characterizes the sludge as a hazardous or dangerous waste, DMC shall take appropriate action as specified in DMOP 18.

33. Vehicles hauling MMWTP filtercake sludge to the site shall display a current vehicle safety inspection certificate consistent with DMOP 18.

TDA 4 FILLING AND STABILIZING OPERATIONS

34. The licensee must submit a facility utilization report to the department by May 31 of each year. The Facility Utilization Report shall include the following:

    A. Aerial photograph of the site.

    B. A summary of any TDA-4 maintenance activities.

C. The impounded volume of fill materials in TDA-4 from all sources.

D. A summary of the calculated radionuclide activity in the MMWTP filtercake sludge placed in the impoundment for radionuclides described in DMOP 18.

E. Any instances in which observed site or waste characteristics were significantly different from those described in applicable documents and license requirements.

F. Any other information that the department may require.

ENVIRONMENTAL

35. The licensee shall conduct an environmental monitoring program capable of detecting the potential contribution of radioactive material from the site to the environment. The program shall include collection of samples and analyses at frequencies specified in Appendix A (Radiological Monitoring Program) and DMC procedures approved by the department. At a minimum, a comprehensive annual report of all department-required sample analyses, with statistical trend analyses and discussions of all anomalous results and actions taken, point of compliance monitoring results, wind rose for the facility, as well as the non-radiological contaminants and parameters shall be forwarded to the department by May 31 of each year. The report shall be submitted in accordance with the department's document entitled "Recommended Content and Format for Annual Environmental Reports." Deviations in the reporting format must be approved by the department.

The licensee shall maintain a radiological monitoring program that meets the minimum requirements as specified in Appendix A.

36. The licensee shall conduct the following ground water and surface water monitoring programs at the millsite:

A. Environmental monitoring, consistent with requirements set forth in Appendix A.

B. Point-of-compliance monitoring, consistent with requirements approved by the department. The monitoring wells to be monitored, consistent with requirements established by 40 CFR 192, are wells designated as GW-6, GW-1A, GW-1B, GW-2, GW-13, and GW-14A.

C. Corrective action monitoring as set forth in the Groundwater Remedial Action Plan (GRAP). The requirements for ground water and surface water monitoring associated with the GRAP may be adjusted semi-annually, based upon the department's semi-annual review. The department may require the modification of the Groundwater

Protection Program.

37. The ground water and surface water monitoring shall involve collecting representative samples from each well and surface water site specified in the environmental monitoring plan, point-of-compliance monitoring program, and GRAP monitoring, including any new wells that may be added to this list in the future. Results and analyses of the ground water and surface water monitoring programs shall be reported to the Department of Health on the following schedules:

    A. Environmental monitoring data and point-of-compliance monitoring data for each calendar year shall be reported to the department in the annual Environmental Monitoring Report, due by the following May 31 of each year.

    B. Ground water monitoring data associated with the GRAP shall be reported semi-annually, consistent with direction from the department.

    C. The department may require the modification of the ground water and surface water monitoring program.

38. The licensee shall report any process fluid spill outside the mill building in accordance with the Spill Response Plan.

39. The licensee shall maintain an ongoing data review program. This review should concentrate on critical sampling media; i.e., air particulates, ground and seepage water at critical stations, direct radiation and radon gas levels. Data shall be reviewed, evaluated, and reported consistent with Dawn Mining Company Quality Assurance Procedure, DMQP 33. Results exceeding action levels that cannot be attributed to sampling or analytical anomalies or to calculational errors shall be reported in writing to the department within 30 days of the determination. The report shall include corrective actions that are being taken or planned.

EVAPORATION SYSTEM OPERATIONS

40. The licensee shall operate the evaporation system consistent with DMOP 13 and the following specific conditions:

    A. The licensee shall expedite the completion of Evaporation System Operations to enhance evaporation and reduce or eliminate water inputs to the evaporation pond system, to the extent of technological feasibility, with consideration for delays resulting from inclement weather, litigation, or other factors beyond the control of the licensee.

    B. The licensee shall discharge winter-collected meteoric water consistent with department-approved procedures, and at a location determined in consultation with department

technical staff, only after approval of agencies with authority has been received.

C. The licensee shall prepare and submit an evaporation pond operations annual report to the department by May 31 each year. The report shall include the following:

- Water evaporation annual performance summaries and trends since 1996.
- Water balance results from the previous calendar year.
- Water balance predictions to complete evaporation pond operations (based on average weather conditions), including precipitation catchment and dewatering from TDA-4 operations.
- Evaporation pond leak detection evaluations.
- Inspection and maintenance.

INTEGRATED PROJECT SCHEDULE

41. The licensee shall submit an update of the IPS by November 30, 2001, and each following year thereafter. The report shall include descriptions of each major task sufficient for independent department review, the schedule and interdependency of tasks, and an updated financial surety estimate. The IPS shall include all tasks sufficient to meet Chapter 246-252 WAC, approved closure plans, final environmental review documents, and all applicable requirements of this license. Operational plans and procedures linked to the tasks shall be included as appendices of the IPS. The IPS shall be maintained under document control. Responses to the department's comments on the IPS shall be submitted for review and approval.

The IPS must address the following major tasks:

ENVIRONMENTAL MONITORING

GROUNDWATER REMEDIATION

EVAPORATION SYSTEM OPERATIONS

MILL OPERATIONS AND SHUTDOWN

MILL DECOMMISSIONING AND DISPOSAL OPERATIONS

CONTAMINATED SOIL CLEANUP AND DISPOSAL OPERATIONS

MMWTP FILTERCAKE SLUDGE DISPOSAL OPERATIONS

TDA-4 FILLING AND STABILIZATION OPERATIONS

BORROW SOURCE DEVELOPMENT

TDA-4 RE-CONTOURING RECLAMATION

FLOOD DIVERSION CONSTRUCTION

TDA 1-3 RECLAMATION

BORROW SOURCE RESTORATION

MONITORING AND STABILIZATION OPERATIONS

LICENSE TERMINATION

LONG-TERM SURVEILLANCE AND MAINTENANCE PLANNING

42. The licensee shall submit IPS task duration and dependency descriptions in annual updates of the IPS. Each IPS task duration and dependency must be based on one or more of the following:

A. Estimates of task duration times (days, months, etc.), using standard engineering methods.

B. The evaluation of contingency requirements before beginning or ending a task.

C. Interim schedule milestones for TDA-4 filling and stabilization operations, TDA-4 re-contouring and reclamation, evaporation pond operations, and TDA 1-3 reclamation and flood diversion construction.

D. Time available between the earliest beginning and latest finishing time for each task.

ENGINEERING

43. Before engaging in any major construction-related activities not previously evaluated by the department, the licensee shall prepare and record an environmental evaluation and an ALARA analysis of such activity. The licensee must provide a written evaluation of such activities and obtain prior approval of the department.

44. Detailed design and specifications must be prepared for each major construction activity, reviewed and approved by a licensed engineer, and submitted to the department for approval, prior to commencement of construction for that activity. When approved, detailed design and specifications shall be placed under document control procedures. Any modifications of detailed design and specifications must be approved by the department.

45. Quality Control procedures that meet the requirements of the license and closure plan, including detailed design and specifications for each major construction activity, shall be submitted to the department for approval, prior to commencement of construction for that activity.

46. Within 120 days after completion of each construction activity, provide a construction report that includes: (1) as-built documents; and (2) a stamped, licensed engineer review verifying that construction was concluded and meets design plans and specifications.

FINANCIAL

47. The licensee shall maintain a department-approved financial surety arrangement consistent with WAC 246-252-090, Criterion 9. This requirement may be satisfied by a department-approved financial surety bond or other acceptable financial instrument.

The licensee shall submit updated closure cost estimates annually by November 30, and provide the closure cost estimates with the IPS. The licensee shall also submit updated closure cost estimates no later than 60 days following any modification or re-evaluation of the closure plan that affects closure costs, and no later than 60 days after the department may otherwise request an update. For each update of estimated closure costs, the licensee shall submit to the department supporting documentation showing a breakdown of the costs and the basis of the updated cost estimate, with adjustments for inflation, changes in engineering plans, activities performed, and any other conditions affecting the estimated costs for site closure. Following the licensee's submission of any updated closure cost estimate, the department will review and comment in writing on the closure cost estimate. Such comments may concur with or may order revisions to the licensee's closure cost estimate. The licensee shall be entitled to obtain review of an order of the department directing any material revisions to the licensee's closure cost estimate. Such review shall be by adjudicative proceeding, conducted pursuant to Chapter 246-10 WAC, including the right to judicial review in accordance with WAC 246-10-706. The licensee shall revise its financial assurance in accordance with a final order of the department.

48. The licensee shall notify the department, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any Chapters of Title II (Bankruptcy) of the United States Code (USC) by or against:

A. The licensee;

B. An entity [as the term is defined in 11 USC, Section 101(14)] controlling a licensee or listing the license or licensee as property of the estate; or

C. An affiliate [as the term is defined in 11 USC, Section 101(2)] of the licensee, and

D. The licensee's notification must also indicate the bankruptcy court in which the petition for bankruptcy was filed; and

E. The date of the filing of the petition.

CLOSURE

49. Six months prior to proposed license termination and transfer of the facility to the government for long-term custody, in accordance with WAC 246-252-030, the licensee shall provide a report which demonstrates that the site has met all post-reclamation Monitoring and Stabilization Plan (MSP) requirements and all remaining license conditions.

50. Final closure for the DMC millsite, including completing emplacement of the final earthen cover to limit radon emanation to no more than 20 pCi/m^2-sec, and tailings recontouring, stabilization, and erosion protection, must be completed by December 31, 2013, in accordance with WAC 246-252-030(6)(A). This license condition may be amended as necessary for reasons of technological feasibility, inclement weather, litigation resulting in delays in emplacement, or other factors beyond the control of the licensee.

51. The MSP shall include the period after tailings reclamation construction, and prior to license termination. The purpose of the MSP is to provide specific monitoring and inspection requirements to verify construction performance. Action levels and/or performance criteria, and actions necessary to assure continued compliance with the Tailings Reclamation Plan, detailed design plans, and specifications shall be included. The MSP shall be a section of the IPS.

PORTABLE GAUGE USE

52. Radioactive material listed in 6.E & F shall be used by, or under the supervision and in the physical presence of, individuals who have successfully completed a training course approved by the department on radiation safety and nuclear moisture/density gauge operation. The RSO shall maintain training certificates for all qualified individuals.

53. The licensee shall maintain a utilization/transfer log for each gauge at the address listed in Condition 10 of this license. The utilization/transfer log shall include, but not be limited to, dates of use, location of use, and the name of the authorized individual checking out the gauge.

A. Each sealed source listed in Subitems 6.E and 6.F shall be tested for leakage and/or contamination at intervals not to exceed twelve (12) months. In the absence of a certificate from a transferor indicating that a test has been made within six (6) months prior to the transfer, a sealed source received from another person shall not be put into use until tested.

B. The test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries (or becquerels) and maintained for inspection by the department.

C. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination (americium 241 and/or cesium 137), the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed in accordance with department regulations. A report shall be filed within five (5) days of the test with the department describing the equipment involved, the test results, and the corrective action taken.

D. The licensee is authorized to perform leak test sampling in accordance with their radioactive materials license application. The analysis shall be performed by persons specifically authorized by the department, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State to perform such services. Alternatively, leak test samples may be collected and/or analyzed by other persons specifically authorized by the department, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State to perform such services. Licensing State authorization only applies to naturally occurring and accelerator produced radioactive material (NARM).

54. Sealed sources containing radioactive material shall not be opened or removed from the nuclear gauges by the licensee.

55. The licensee shall instruct all users that any maintenance (except limited maintenance as defined in the application instructions) or repair on the gauges involving removal of the source holders shall be performed only by the device manufacturer or by other persons specifically authorized by the department, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State (for NARM only) to perform such services.

56. The licensee shall conduct a physical inventory every six (6) months to account for all sealed sources received and possessed under this license. The records of the inventories shall be

maintained for inspection by the department, and shall include the quantities and kinds of radioactive material, location of sealed sources, and the date of the inventory.

57. Licensee personnel authorized to use radioactive material listed in 6.E & F shall use personnel monitoring devices capable of detecting neutron radiation. These personnel monitoring devices shall be exchanged at least quarterly.

INCORPORATION BY REFERENCE

58. Except as specifically provided by this license, the licensee shall possess and use radioactive material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in the documents listed below. The department's "Rules and Regulations for Radiation Protection," Title 246 WAC, shall govern the licensee's statements in applications or letters, unless statements are more restrictive than the regulations. Any change to the documents listed below shall require departmental approval in the form of an amendment to this license.

A. Ground water protection plan dated April 25, 1994.

B. Closure plan dated May 1994, and letter and attachments dated December 28, 1994.

C. License renewal request dated August 18, 1998.

D. Letter and attachment dated February 16, 2000, for the direct disposal of MMWTP filtercake sludge into TDA-4.

E. Letter and attachment dated November 22, 1999, Integrated Project Schedule for Closure of the Dawn Mining Company Millsite (IPS).

FOR THE STATE OF WASHINGTON DEPARTMENT OF HEALTH

Date 11 April 2001

BY _____
John L. Erickson, Director
Division of Radiation Protection

APPENDIX A

RADIOLOGICAL MONITORING PROGRAM

Type of Sample	Location		Sample Collection: Method	Sample Collection: Sampling Frequency	Sample Analysis: Type of Analysis
Radon Gas	Stations:	2-1 2-2 2-3 2-4 2-5 2-B (control)	Passive	Continuous with Quarterly Evaluation	Radon-222
Direct Gamma	Stations:	*2-1 2-2 *2-3 *2-4 2-5 *2-B (control)	TLD	Continuous with Quarterly Evaluation	Gamma
Groundwater	Wells:	*GW-1A GW-1B *GW-2 GW-3 GW-6 GW-12 GW-13 GW-14A	Grab	Semi-Annual	Dissolved Natural Uranium, pH, TDS, SO_4, Na, Ca, Mg, Cl
Domestic Wells	Wells:	DW-3 DW-4 (or DW-6)	Grab	Semi-Annual	Dissolved Natural Uranium, pH, TDS, SO_4, Na, Ca, Mg, Cl
Seepage Water		SW2B SW2C *SW2D	Grab	Quarterly	Dissolved Natural Uranium, Ra, pH, TDS, SO_4, Na, Ca, Mg, Cl

APPENDIX A

RADIOLOGICAL MONITORING PROGRAM

Type of Sample	Sample Collection			Sample Analysis
	Location	Method	Sampling Frequency	Type of Analysis
Air Particulates	2-1 2-2 2-3 ***	Low volume Lapel	Continuous with Quarterly Evaluation See 27 (4)	Natural Uranium, $Ra-^{226}$, $Th-^{230}$
Surface Water	*SW-4 *SW-5	Grab	Semi-Annual	Dissolved and suspended** Natural Uranium, Ra, pH, TDS, SO_4, Na, Ca, Mg, Cl
Soil	Stations: 2-1 2-2 *2-3 2-4 2-5 2-B (control)	Grab	Annual	Natural Uranium, $Ra-^{226}$, $Pb-^{210}$
Sediment	SW-5 *SW-4 SW-2B SW-2C SW-2D	Grab	Annual	Natural Uranium, $Ra-^{226}$, $Th-^{230}$, $Pb-^{210}$
Interim Tails Stabilization	Tailings Area	Survey	3 times/week	Document deficiencies and corrective actions
Meteorological Conditions	Near millsite in open area	Anemometer and wind vane	Continuous	Wind speed and direction (wind rose)
Ground water (unsaturated zone)	Operational Lysimeters	Grab	Semi-annual	pH, conductivity, Mg, TDS, SO_4 (if sufficient volume of liquid is present)

* Split sampling with Department of Health
** Radionuclides only
*** In accordance with DMOP 18